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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,728	06/27/2005	Thomas Julius Borody	3800027.00002 / 3703US	7029

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EXAMINER	
HOLT, ANDRIAE M	

ART UNIT	PAPER NUMBER
1616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/506,728	BORODY ET AL.	
	Examiner	Art Unit	
	Andriae M. Holt	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3*

10506728 - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,37-40 and 42-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,37-40 and 42-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/15/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on March 15, 2009 and March 26, 2009 has been entered.

Claims 1-11, 37-40, and 42-53 are pending in the application. Claims 1, 8, and 9 have been amended. Claims 40 and 42-53 are newly added. Claims 1-11, 37-40, and 42-53 will presently be examined to the extent they read on the elected subject matter of record.

Status of the Claims

Rejections and/or objections not reiterated from the previous Office Action are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set of rejections and/or objections presently being applied to the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 9, 10, 37-38, 40, 42, 44, 46, 48, 50, and 52 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Hechter (US 4,975,286) in view of The Schiller Publication (2001) and Fukahori et al. (JP 07242539) (Derwent Abstract).

Applicant's Invention

Applicant claims a composition comprising at least one water-soluble sodium salt; at least on water-soluble minimally degradable sugar, at least on water-soluble potassium salt and at least on water-soluble magnesium salt. Applicant claims the minimally degradable sugar is xylose. Applicant further claims the water-soluble sodium salt is sodium chloride, the water soluble potassium salt is potassium chloride and the water-soluble magnesium salt is magnesium sulfate.

Determination of the scope of the content of the prior art (MPEP 2141.01)

Hechter teaches an aqueous cathartic solution and method for bowel cleansing. The solution is isotonic, has a minimum buffering effect on human blood and is substantially inorganic. The aqueous solution includes about 3.5 grams/liter of sodium sulfate; about 4.82 grams/liter of magnesium sulfate; about 1.9 grams/liter of sodium bicarbonate; about 3.85 grams/liter of sodium chloride; about 0.746 grams/liter of potassium chloride (Abstract). Hechter teaches the aqueous cathartic solution contains

chloride ions in concentrations lower than the concentration of chloride ions in human blood, potassium ions in concentrations higher than the concentration of potassium ions in human blood and magnesium and sulfate ions in concentrations to provide significant cathartic effect. The cathartic solution has a maximal, safe, cathartic effect with a minimal intake of solution. It cleanses the bowel thoroughly enough so that the colonoscopy or barium enema x-ray examination can be done without the need of cleansing enemas and provides sufficient intact exfoliated colon cells to permit cell harvesting for cytological examination (col. 2, lines 27-39). Hechter teaches it has been found that the most efficient bowel cleansing occurs if the cathartic solution is prepared and ingested in the following manner. Approximately sixty (60) grams of a dry power formulation is provided in a four (4) liter container. About twenty-four (24) hours prior to the examination procedure a liter of lukewarm tap water is mixed with the dry power contents in the container. After this initial mixing, three (3) additional liters of tap water are added to the container and the entire solution is mixed again. To aid in patient tolerance the mixed solution is chilled. The patient may have a light lunch at about 1:00 p.m. on the day before the procedure. After this the patient may not drink or eat anything other than what is set forth in the regimen. At about 3:00 p.m. in the afternoon the patient should take about 30 milligrams of bisacodyl. The bisacodyl is generally provided in tablet form. The tablets should be swallowed whole (col. 3, lines 55-68-col. 4, lines 1-11). Hechter teaches that although four liters is the preferred dosage, patients drinking average dosage amounts of between 1.6 liters and 2.8 liters of solution had their colons cleared sufficiently for a colonoscopy (col. 4, lines 13-16).

Ascertainment of the difference between the prior art and the claims (MPEP 2141.02)

Hechter does not teach the use of a minimally degradable sugar. It is for this reason the Schiller Publication and Fukahori et al. are added as secondary references.

The Schiller Publication (Schiller) teaches that laxatives and lavage solutions used to treat constipation are used in preparation and evacuation of the bowels after toxic ingestions (page 749, Summary). Schiller teaches one class of drugs used in the treatment of constipation is osmotic agents. Schiller teaches that osmotic agents are ions or molecules that are poorly absorbed by the intestine and therefore obligate retention of water within the intestinal lumen to maintain isotonicity with plasma. Schiller teaches osmotic agents include incompletely absorbed salts such as magnesium, sulphate, and phosphate salts; poorly absorbed disaccharides such as lactulose; and sugar alcohols, such as sorbitol or mannitol (page 752, col. 2, Osmotic agents). Schiller teaches that even though osmotic agents may be ingested as hypertonic solutions, the high water permeability of the jejunum allows rapid osmotic equilibration, water is retained intraluminally, and the hypertonicity is rapidly dissipated. Schiller teaches that the laxative effect of these agents depends on the extent to which they remain in the lumen (page 752, col. 2, Osmotic agents, paragraph 1). Another class of drugs used in the treatment of constipation is diphenylmethane derivatives. Schiller teaches that diphenylmethane derivatives include bisacodyl and sodium picosulphate (page 755, col. 1, paragraph 1). Schiller teaches that many patients are given laxatives in an attempt to cleanse their colons before procedures, such as barium enema, colonoscopy, or

surgery. Schiller teaches that many patients object to drinking 4 L of solution and therefore concentrate ionic osmotic laxatives are prepared (page 759, Colon preparation, paragraph 2). Schiller also teaches that cathartics such as bisacodyl can be used for colon preparation (page 759, paragraph 3).

Fukahori et al. teach compositions containing an organic salt, and an amount of sugar alcohol provides laxative effects. Fukahori et al. teach that the composition have the optional presence of calcium salt. Fukahori et al. teach the sugar alcohol is xylitol, sorbitol, mannitol, maltitol, and/or isomaltosyl oligosaccharide alcohol. Fukahori et al. teach the organic acid is citric acid, succinic acid, lactic acid. Fukahori et al. teach in an example a reduced starch hydrolysate PO-40, lactic acid, and citric acid were dissolved in water with sodium benzoate and sodium hydroxide to give a solution. The solution filled in a glass ampoule to form a laxative composition. PO-40 comprised sorbitol, maltitol, maltotritol and oligosaccharide alcohol.

Finding of prima facie obviousness
Rationale and Motivation (MPEP 2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Hechter, Schiller, and Fukahori et al. and use a minimally degradable sugar in the composition. One skilled in the art at the time the invention was made would have been motivated to use a minimally degradable sugar in the formulations taught by Hechter because Schiller teaches that osmotic agents, poorly absorbed ions, i.e. magnesium ions, and poorly absorbed disaccharides and sugar alcohols, i.e. lactulose and mannitol, and diphenylmethane derivatives, i.e. bisacodyl

are also used as colon preparation agents. Therefore, in view of *In re Kerkhoven, 205 USPQ 1069 (C.C.P.A. 1980*), it is *prima facie* obvious to combine two or more compositions each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in prior art, thus claims that requires no more than mixing together two or three conventional osmotic agents used in colon preparation set forth prima facie obvious subject matter.

Therefore, the claimed invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made because every element of the invention has been fairly suggested by the cited reference.

Claims 1-11, 37-40, and 42-53 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Hechter (US 4,975,286) in view of The Schiller Publication (2001), Borody et al. (US 5,858,403), and Jacob et al. (US 6,162,464).

Applicant's Invention

Applicant claims a composition comprising at least one water-soluble sodium salt; at least on water-soluble minimally degradable sugar, at least on water-soluble potassium salt and at least on water-soluble magnesium salt. Applicant claims the minimally degradable sugar is xylose. Applicant further claims the water-soluble sodium salt is sodium chloride, the water soluble potassium salt is potassium chloride and the water-soluble magnesium salt is magnesium sulfate. Applicant further claims the formulation further comprises sodium picosulfate.

Determination of the scope of the content of the prior art (MPEP 2141.01)

The teachings of Hechter with respect to the 35 U.S.C. 103(a) rejection is hereby incorporated and are therefore applied in the instant rejection as discussed above.

Ascertainment of the difference between the prior art and the claims (MPEP 2141.02)

Hechter does not teach the formulation in tablet form or the use of picosulfate. It is for this reason the Schiller Publication, Borody et al. and Jacob et al. are added as secondary references.

Borody et al. teach an osmotic colonic evacuant in solid dosage form, which comprises a phosphate based laxative or a sulfate based laxative and preferably comprises sodium picosulfate and an antacid, is used preferably in conjunction with 250 ml to 1,500 ml diluent, alone or as part of a sequential pack, to evacuate the colon (Abstract). Borody et al. teach that the colonic evacuant is a solid oral dosage form. Typically selected from a tablet for example a compressed tablet, a coated tablet and/or an exploding tablet; capsule for example a coated capsule and/or an exploding capsule; lozenge; pill or powder. Borody et al. teach that preferably the solid oral dosage form is coated to avoid dissolution in the mouth. (col. 3, lines 58-63). Borody et al. teach typically the preferred colonic evacuant is a mixture of sodium dihydrogen phosphate and disodium hydrogen phosphate or a mixture of sodium picosulfate and magnesium oxide (col. 3, lines 49-57). Borody et al. teach that the osmotic colonic evacuant of the present invention may further comprise an antacid. Examples of antacids include magnesium oxide, calcium carbonate, magnesium alginate,

magnesium hydroxide, magnesium carbonate, magnesium citrate, magnesium aspartate, magnesium trisilicate (col. 5, lines 8-12).

Jacob et al. teach orally administered colonic purgative formulations and methods of its use for effecting partial or complete purgation of the colon in mammals. Jacob et al. teach the formulations consisting of non-aqueous admixtures of a purgative salt selected from the group consisting of $Mg_3(PO_4)_2$, $MgHPO_4$, $Mg(H_2PO_4)_2$, $MgSO_4$, $MgCl_2$, Na_2SO_4, sodium tartrate, potassium tartrate, magnesium tartrate and mixtures, thereof, administered in tablet or capsule form in purgative effective

Finding of prima facie obviousness
Rationale and Motivation (MPEP 2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Hechter, Schiller, Borody et al., and Jacob et al. and formulate the composition into a tablet. One skilled in the art at the time the invention was made would have been motivated to formulate the compositions taught by Hechter into tablet form because Borody et al. and Jacob et al. teach the formulation of colonic purgatives into tablet formulations to provide conveniently administered dosage formulations that provide minimum amount of discomfort to the patients as is always the goal in improving patient compliance. Neither reference teaches the tablet formulation comprises a core comprising sodium, potassium, and magnesium salts and a coating comprising a minimally degradable sugar. However, each reference teaches the tablets have a core comprising an antacid, a magnesium salt (Borody et al.), and purgative active amounts of a salt selected from magnesium salts, potassium tartrate,

and sodium tartrate (Jacob et al.), which are coated to avoid dissolution in the mouth. Therefore, it would have been obvious to the skilled artisan to use a coating over the core salts. The selection of the particular coating is matter of routine experimentation and optimization and well within the purview of the skilled artisan. Absent evidence that the coating of the core of the purgative salts with a minimally degradable sugar provides unexpected results, this modification would have been *prima facie* obvious to the skilled artisan.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Hechter, Schiller, Borody et al., and Jacob et al. and use sodium picosulfate in the formulation. One skilled in the art at the time the invention was made would have been motivated to use a minimally degradable sugar in the formulations taught by Hechter because Schiller teaches that osmotic agents, poorly absorbed ions, i.e. magnesium ions, and poorly absorbed disaccharides and sugar alcohols, i.e. lactulose and mannitol, and diphenylmethane derivatives, i.e. bisacodyl and sodium picosulfate are also used as colon preparation agents. In addition, Borody et al. teach the combination of picosulfate with antacids, such as magnesium oxide, a magnesium salt as a colonic purgative. Therefore, in view of *In re Kerkhoven, 205 USPQ 1069 (C.C.P.A. 1980*), it is *prima facie* obvious to combine two or more compositions each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in prior art,

thus claims that requires no more than mixing together two or three conventional osmotic agents used in colon preparation set forth prima facie obvious subject matter.

Therefore, the claimed invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made because every element of the invention has been fairly suggested by the cited reference.

Response to Declaration

The declaration under 37 CFR 1.132 filed March 15, 2010, is insufficient to overcome the rejection of claims 1-11 and 37-39 based upon 35 U.S.C. 103(a) as set forth in the Office action because: the data is not commensurate in scope with the claims and the data presented is not a true side-by-side comparison of the prior art. Applicant claims a composition comprising at least one water-soluble sodium salt, at least one water-soluble minimally degradable sugar, at least one water-soluble potassium salt, and at least one water soluble magnesium salt. Applicant provides data for the Hydroprep composition that includes sodium picosulphate, magnesium sulphate, sodium sulphate, potassium gluconate, sodium chloride and mannitol. The components of the Hydroprep composition are single species in the genus of water-soluble sodium salts, water-soluble minimally degradable sugars, water-soluble potassium salts, water-soluble magnesium salts and stool softening agents. The examiner cannot determine if the results obtained would be representative of the results using any water soluble sodium salt, water-soluble minimally degradable sugar, water-soluble potassium salt, water soluble magnesium salt, and stool softening agent, known and unknown. A single

species cannot show purported unexpectedness of an entire genus. Applicant has not provided sufficient data to show that any and all water soluble sodium salts, water-soluble minimally degradable sugars, water-soluble potassium salts, water soluble magnesium salts, and stool softening agents will provide the same purported bowel wall cleansing and reduction in side effects provided by results of the Hydroprep composition presented in the declaration. Therefore, the examiner notes that the data is not commensurate in scope with the claims.

The data presented is not a true side-by-side comparison of the prior art of record, Kawakami. Applicant compares the Hydroprep composition to the PicoPrep® composition with fruit juices to provide a similar formulation to the formulation taught by Kawakami. Applicant is required to present a true side-by-side analysis using the formulations of the prior art, Kawakami. Kawakami teaches the use of 32.3 to 35.7 gm of magnesium citrate in 900 ml of an aqueous solution of sodium chloride 4.8 to 5.4 mmol, potassium hydroxide 8.5 to 9.3 mmol, and sugars 10.7 to 2.1 gm. The PicoPrep® composition (3 sachets) contains 30 mg picosulphate, 10.5 g magnesium oxide, 36 g of citric acid, and 108 mg of aspartame. The PicoPrep® composition uses magnesium oxide as the magnesium salt, not magnesium citrate, as taught by Kawakami. The PicoPrep® composition does not contain a sodium salt, potassium salt, or sugar, as taught by Kawakami. In addition, the PicoPrep® composition contains a stool-softening agent, sodium picosulfate, which is not taught by the prior art reference. Applicant's independent claim 1, provides for a purgative composition that comprises at least one water-soluble sodium salt, at least one minimally degradable sugar, at least one water-

soluble potassium salt, and at least one water-soluble magnesium. Independent claim 1 does not include a stool softening agent. Therefore, the data provide is not a true comparison of Applicant's independent claim 1, that has been examined and the prior art reference, Kawakami.

None of the claims are allowed.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andriae M. Holt whose telephone number is 571-272-9328. The examiner can normally be reached on 9:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Andriae M. Holt
Patent Examiner
Art Unit 1616

/John Pak/
Primary Examiner, Art Unit 1616